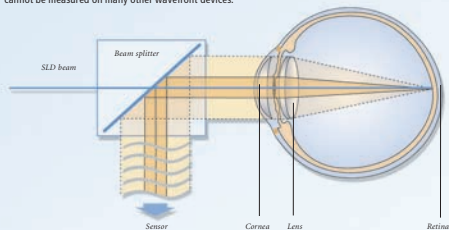


## Examinations - in the blink of an eye

### 13 milliseconds is all it takes

The heart of the WASCA Analyzer is a high-resolution Shack-Hartman wavefront sensor. With a sensor resolution of 210  $\mu\text{m}$  and 1452 measuring points, it measures wavefront aberrations with unparalleled detail and precision.

The extremely short measuring time of 13 milliseconds virtually eliminates inaccuracies caused by eye movements during measurement. High accuracy and robustness throughout the instrument's large measurement range is provided by a unique optical design that eliminates sensor lenslet spot overlap. This allows the WASCA Analyzer to measure highly aberrated eyes that cannot be measured on many other wavefront devices.



*Higher-order aberrations are a complex, inhomogeneous distribution of refractive power within the pupil that cannot be described by refraction data such as sphere and cylinder. Optical aberrations such as coma and spherical aberration are not detected by conventional refraction and often manifest themselves in subjective complaints such as poor night vision.*

### Eye registration delivers new insights

The WASCA Analyzer captures multiple structural reference points on the eye for precise and repeatable registration. In addition to capturing high-resolution scleral blood vessel and iris structure images, the WASCA Analyzer measures the position of the limbus margin and pupil center. This combination provides a unique reference for the wavefront aberrations on the eye for confident, repeatable treatment placement and combination of data.



When your patients entrust you with their eyesight, their vision and your expertise converge. For the world's most advanced surgical and diagnostic solutions in ophthalmology, you can turn to Carl Zeiss Meditec. We're committed to earning your trust anew, every day.

## Technical data

### WASCA Analyzer

Sensor type	Shack-Hartman
Measuring range	-15 D to +7 D including 5 D cylinder
No. of measuring points	1,452 total 800 in a 7 mm pupil
Resolution	210 $\mu\text{m}$
Accuracy	$\pm 0.15$ D in a range of -14 D to +6 D including 3 D cylinder $\pm 0.5$ D in a range of -15 D to +7 D including 5 D cylinder
Repeatability	$\pm 0.1$ D standard deviation
Measuring time	13 ms
Fogging	1.5 D
Probe beam laser	Super luminescence diode 850 nm
Line voltage	100, 120, 208, 220, 230 and 240 V adjustable 50 - 60 Hz
Power consumption	max. 630 VA
Dimensions	139 x 78 x 159 cm ( 54.7 x 30.7 x 62.6 inches)
Weight	approx. 118 kg (53.5 lbs)

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## WASCA Analyzer - Precision in Focus



## New dimensions in aberrometry

### See more

#### See beyond

High resolution wavefront aberrometry offers a new dimension in understanding and enhancing vision. Wavefront aberrometry has allowed clinicians to understand both common and unique aberrations which limit the visual quality of each patient. This has led to the introduction of aspheric intraocular lens designs and excimer laser treatment patterns to minimize or eliminate contrast-limiting spherical aberration.

With its innovative, high resolution technology, the WASCA Analyzer is one of the leading diagnostic instruments of its type. It analyzes the optical characteristics of the entire eye - both refraction as well as higher-order aberrations - in a single measurement.

Now, the WASCA Analyzer goes even further: new software components provide diagnostic possibilities that allow you to look even deeper.

### Technology refined

#### Simulations deliver new perspectives

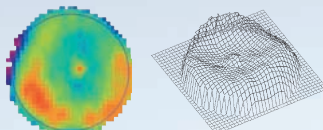
A patient's subjective assessment of visual quality remains an important aspect of any vision examination. Before wavefront aberrometry was available to practitioners, little information existed to explain the discrepancies between measured acuity and subjective visual quality. With the WASCA Analyzer, you now have the opportunity to selectively simulate the effect of a patient's measured wavefront aberrations and conduct a targeted comparison with the patient's own assessment of visual quality. This not only helps educate the patient, but provides important data for vision correction planning.

The WASCA Analyzer offers several simulation tools:

**PSF - Point Spread Function** simulates the point imaging ability of the eye and shows which distortions result from the aberrations.

**MTF - Modulation Transfer Function** illustrates the contrast sensitivity derived from the wavefront measurement.

**Image Simulation** is able to simulate the influence of the wavefront error on any image from the patient's everyday life.



Wavefront display using zonal reconstruction

#### Unparalleled sensitivity

The zonal reconstruction algorithm represents another unique innovation with the WASCA Analyzer, providing the highest fidelity wavefront representation available. This ensures maximum spatial resolution for detection and monitoring of fine structures in the wavefront pattern. No detail gets lost by unnecessary smoothing algorithms. This provides a high level of confidence in your measurements for diagnosis or follow-up examinations.

### Work more efficiently

#### An ergonomic, multifunction workstation for your entire practice

The WASCA Analyzer was designed with ease-of-use and patient workflow in mind. High reliability with intuitive displays and ergonomics make this an easy instrument to integrate into your surgical and general refractive practice. Both patient and user comfort are facilitated by the ergonomic instrument table. As an added benefit, the WASCA Analyzer provides unparalleled autorefracton capability for general examinations and follow-up.

#### Versatile, intuitive displays and controls

The WASCA Analyzer makes it easy to evaluate single and sequential measurements, whether in a table, as a pictorially documented wavefront measurement. The integrated slider control enables you to easily navigate the intuitive menus and obtain detailed information or a complete overview.

"Multiple Frame Analysis" enables you to easily compare multiple measurements from a single patient to show differences and monitor changes over time. The standardized database format makes it possible to evaluate and handle large quantities of data for scientific use. A DVD/CD writer is included for data storage and archiving.

#### Don't wait, get started

Particularly nice for doctors and patients: workflow and comfort are facilitated by the WASCA Analyzer's ability to quickly measure without requiring pupil dilation. The gentle and extremely fast measurement of the WASCA Analyzer minimizes unwanted constriction of the pupil, the eye can be measured in its most natural state.

